



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:  
WU-16J

**CERTIFIED MAIL 7009 1680 0000 7674 5314**  
**RETURN RECEIPT REQUESTED**

Mr. Scott McDonald  
Project Manager  
Archer Daniels Midland Company  
4666 Faries Parkway  
Decatur, Illinois 62526

**Subject: Second Request for Information Regarding Archer Daniels Midland (ADM)  
Well CCS #2, United States Environmental Protection Agency Underground  
Injection Control (UIC) Permit Application #IL-115-6A-0001**

Dear Mr. McDonald:

The Underground Injection Control (UIC) Branch has completed additional review of the permit application referenced above. Our comments and requests for additional information for Sections 3, 4, 6, 7, 8 and a list of required reference documents are enclosed. Please submit your answers within 30 days of your receipt of this letter.

Inquiries concerning the contents of the enclosures may be directed to Dana Rzeznik of my staff by telephone at (312) 353-6492 or by email to [rzeznik.dana@epa.gov](mailto:rzeznik.dana@epa.gov).

Sincerely yours,

A handwritten signature in black ink, appearing to read "Rebecca Harvey", is written over a large, stylized circular flourish.

Rebecca Harvey, Chief  
Underground Injection Control Branch

cc: Mark Burau, ADM, with enclosures  
Stephen Nightingale, IEPA

Enclosures

### **Notes/Deficiencies, ADM Class VI Permit Application, Section 3 – Injection, Verification and Geophysical Wells Design and Construction**

- According to 40 CFR 146.86 (B) Casing and cementing of Class VI Wells, it states “All well material must be compatible with fluids with which the materials may be expected to come into contact and must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM international or Comparable standards acceptable by the Director.”

Please provide a copy of such standards for reference.

### **Notes/Deficiencies, ADM Class VI Permit Application, Section 4 – Operation Program and Surface Facilities**

- Please provide the composition of the annulus fluid.

### **Notes/Deficiencies, ADM Class VI Permit Application, Section 6 – Monitoring and Testing Plan**

Section 6A.1.2 – Please provide the rationale used to select the parameters to be analyzed in Appendix E. Please also address the corrosivity and toxicity of the injectate.

Section 6A.2 – More specific information to “other zones above the caprock, and the shallow groundwater zones” is needed as the geologic stratigraphy of the site is known. The type of “monitoring data” should be specified “... to validate modeling techniques used in predicting the distribution of carbon dioxide.”

Section 6A.2.1 and 6A.2.2 – Please specify methods to be used or reference appropriate sections for more detailed information about the monitoring methods and systems.

Section 6A.2.5 – Please specify the type of acoustic measurements and provide reference that the acoustic methods could provide credible results in tracking the plume. Please specify the type of seismic survey to be used.

Section 6A.6 – In the discussion of semiannual reports under monthly values, please change ii. Flow rate and volume to Flow rate and mass.

Section 6B.3. 1)b – Please explain how the “...more than 100 feet” was selected.

Section 6B.3.1 We could not locate Figure 6 – please provide a copy.

The groundwater monitoring wells that terminate in the Pennsylvanian are really quite shallow and serve the purpose to directly monitor any potential changes to the locally utilized USDW rather than monitoring for leakage through the primary confining zone. EPA Guidance says "...the owner is required to construct monitoring wells perforated above the confining zone in a suitable formation for collection of ground water samples." The seemingly most economical solution would be if the Westbay system in the verification well could be perforated in the aquifer above the Eau Claire (to detect leakage through the confining zone) as well as in the St. Peter (to detect fluid movement into the lowest USDW). Please address this issue in your response.

**Notes/Deficiencies, ADM Class VI Permit Application, Section 7 – Injection Fluid Characteristics**

- No comments

**Notes/Deficiencies, ADM Class VI Permit Application, Section 8 – Injection, Verification and Geophysical Wells Plugging and Abandonment**

**Section 8A – Injection well**

- With the proposed number of sacks of cement used for Plug #1 through #14, the calculated top of cement would be at 219', and an additional plug is required from 219' to the surface (requiring 84 sacks of cement). In addition, since the well will be plugged from the total depth to surface, a 20% excess cement should be used across the perforations. Please revise the P&A plan to account for these requirements. Please also verify that the cost estimate is based on the actual costs of contracting an independent third party to conduct the activities.

**Section 8B – Verification well**

- With the proposed number of sacks of cement used for Plug #1 through #14, the calculated top of cement would be at 171', and an additional plug is required from 171' to the surface (requiring 20 sacks of cement). In addition, since the well will be plugged from the total depth to surface, a 20% excess cement should be used across the perforations. Please revise the P&A plan to account for these requirements. Please also verify that the cost estimate is based on the actual costs of contracting an independent third party to conduct the activities.

**Section 8C – Geophysical well**

- Please provide the P&A plan (form 7520-14) for this well. Please include a cost estimate based on the actual costs of contracting an independent third party to conduct the plugging and abandonment activities of the plan.

## **References needed for ADM CCS#2 Application**

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